## REMARKS/ARGUMENTS

Claims 1, 2, 5, 7-18, and 21-25 are pending in this application. Claims 1, 18, and 21 have been amended to better claim the subject matter which Applicants regard as the invention and for improved clarity. Claims 24 and 25 have been added with this Amendment. Support is found in the as-filed Specification, Examples 1-4 on pages 10-11. No new matter has been added with this Amendment.

Claims Rejections under 35 U.S.C. § 103:

Claims 1-2, 5, and 7-23 remain rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Glenn *et al.* (United States Patent No. 5,980,898) in view of Field *et al.* Applicants respectfully traverse the rejection.

The Office Action states:

> Glenn *et al.* teaches a transcutaneous immunization formulation comprising antigen and an adjuvant applied to unbroken skin and without perforation of the skin induces an immune response. Glenn *et al.* further teaches that the antigen may be further derived from a virus or from a membrane alone. Glenn *et al.* also teaches that an antigen may be in the form of an inactivated virus.

Applicants emphasize that the invention claimed is a method for inducing an immune response using a composition of a particulate antigen of diameter from about 50 to 200 nm without the use of an adjuvant. As pointed out by the Examiner, the Glenn patent describes a method of immunization using a combination of an antigen and an adjuvant. The antigens in Glenn *et al.* are soluble proteins derived from various pathogens including viruses. There is nothing in the cited patent which suggests that an effective immunization can be achieved by administering particulate

antigens on the intact surface of the skin without the aid of an adjuvant. The present invention is the first actual experimental demonstration that the administration of the particulate antigens of relatively large size alone (i.e., virus particles not combined with an adjuvant) is sufficient to provide protective immunity. The state of the art at the time the present invention was made was such that the method claimed herein was not expected to induce an efficient immune response.

Applicants note that the antigen in Glenn *et al.* may be derived from a virus. However, this antigen, whether it is derived from a virus or any other source, has to be used in combination with an adjuvant according to the method of Glenn *et al.* There is no suggestion therein that such an antigen can be used without the aid of an adjuvant to induce an effective immune response.

The Office Action further states:

> Glenn *et al.* does not teach the method of inactivating the viruses, neither does it teach the size of the antigenic particles in nm. Nor does it teach the particulate antigen comprises hemagglutinin.

The above statement directly supports the Applicants' position that the claimed invention is not taught or suggested by Glenn *et al.* Since the invention was not suggested, there was no reason for the cited reference to provide the information relevant to the above statement. Unless the method claimed in the present application was experimentally tested as is the case herein, those skilled in the art would not have known or believed that it is possible to induce an efficient immune response by administering inactivated virus particles onto the unbroken skin without the aid of an adjuvant. At best, Glenn *et al.* provides mere speculation without presenting any actual data.

Applicants maintain that the viruses listed in the cited reference (column 9) represent those of infectious pathogens from which an antigen can be derived to be used in the method disclosed therein. As stated in the Office Action, the pathogens including viruses listed in Glenn *et al.* may be used in the preparation of antigens in the treatment of infections resulting from such pathogens. However, the method disclosed in Glenn *et al.* requires the use of an adjuvant as well as the antigen that is derived from the pathogen.

Fields *et al.* is a general reference that provides a brief description of licensed vaccines, live and non-living, in the United States. The fact that the hemagglutinin is the major antigen of the influenza virus is well known in the art. The novelty and non-obviousness of the invention is the finding that the particulate antigens of relatively large size such as an intact virus particle can induce an effective immune response when administered onto the unbroken skin without the use of an adjuvant. The cited reference has little bearing on the claimed invention.

Based on the foregoing, Applicants respectfully submit that claims 1, 2, 5, and 7-25 are not *prima facie* obvious over Glenn *et al.* in view of Fields *et al.* Withdrawal of the rejection is respectfully requested.

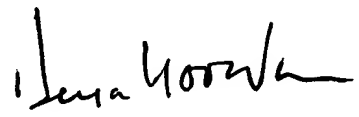
Conclusion:

Based on the foregoing amendments and arguments, this application is considered to be in condition for allowance. Passage to issuance is respectfully requested.

If there are further issues related to patentability, the courtesy of a telephone interview is requested, and the Examiner is invited to call to arrange a mutually convenient time.

It is believed that this submission does not require the payment of any fees. However, if this is incorrect, please charge any deficiency or credit any overpayment to Deposit Account No. 07-1969.

Respectfully submitted,



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